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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/627,662      | 07/28/2000  | Sam S. Lightstone    | CA990022US1         | 3033             |

24033 7590 10/30/2002

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EXAMINER

LY, ANH

ART UNIT PAPER NUMBER

2172

DATE MAILED: 10/30/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/627,662

Applicant(s)

LIGHTSTONE ET AL.

Examiner

Anh Ly

Art Unit

2172

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 July 2000.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 27-56 is/are pending in the application.
- 4a) Of the above claim(s) 1-26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 27-56 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☒ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)                      4) ☒ Interview Summary (PTO-413) Paper No(s). 7.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.                      6) ☐ Other:

**DETAILED ACTION**

***Election/Restrictions***

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-26, drawn to access for optimizing or efficiency in class 707, subclass 2.
  - II. Claims 27-56, drawn to query processing or operations in class 707, subclass 3.
2. The inventions are distinct, each from the other because of the following reasons:

Inventions in Group I and Group II are related as sub-combinations discloses as usable together in a single combination. The sub-combinations are distinct from each other if they are shown to be separately usable. In the instant case, the invention in Group I has separate utility from invention Group II. Group I related to optimizing and Group II related to processing or operations. (see MPEP 806.05(d)).
3. Because the inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. During a telephone conversation with Mr. David W. Victor (Reg. No. 39,867) on October 16<sup>th</sup>, 2002 a provisional election was made without traverse to prosecute the invention of Group II, updating an index on a database table, claim 27-56. Affirmation of

this election must be made by applicant in replying to this Office action. Claims 1-26 have been withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Claims 27-56 are pending in this application.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 27-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,026,406 issued to Huang et al. (herein Huang) in view of 5,924,088 issued to Jakobsson et al. (herein Jakobsson).

With respect to claim 27, Huang discloses receiving data records to load into the table (col. 2, lines 5-42); updates the index on the table as each received data record is added to the table and rebuilds the index from the table after all the received data records have been added to the table (col. 2, lines 35-53, col. 3, lines 40-67 and col. 15, lines 8-60).

Huang does not explicitly indicate, "selecting one of one a first operation and the second operation, using the selected first operation or second operation."

However, Jakobsson discloses heuristic ranking of index access methods (col. 8, lines 15-65).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Huang with the teachings of Jakobsson so as to obtain a method for updating an index in on a database table. This combination would provide the method with an index access path to retrieve data from a table and thus would reduce the amount of processing for the most of fetching for he row with superior performance characteristics for an index access path (Jakobsson – col. 4, lines 1-67) in the updating index of database table environment.

With respect to claim 28, Huang discloses a method of updating index as discussed in claim 27.

Huang does not explicitly indicate, "determining which of the first operation or second operation is more efficient, wherein the first or second operation determined to be more efficient is the selected operation used for updating the index with the received data."

However, Jakobsson discloses heuristic ranking of index access methods (col. 8, lines 15-65).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Huang with the teachings of Jakobsson so as to obtain a method for updating an index in on a database table. This combination would provide the method with an index access path to retrieve data from a table and thus would reduce the amount of processing for the most of fetching for he row with superior performance characteristics for an index access path (Jakobsson – col. 4, lines 1-67) in the updating index of database table environment.

With respect to claim 29, Huang discloses a method of updating index as discussed in claim 27. Also Huang discloses to add to the table and 3 characteristics of the index as claimed (col. 1, lines 40-48, col. 2, lines 5-15 and lines 35-42).

Huang does not explicitly indicate, “wherein determining which operation is more 2 efficient is a function of a percentage of the received data records.”

However, Jakobsson discloses heuristic ranking of index access methods (col. 8, lines 15-65).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Huang with the teachings of Jakobsson so as to obtain a method for updating an index in on a database table. This combination would provide the method with an index access path to retrieve data from a table and thus would reduce the amount of processing for the most of fetching

for the row with superior performance characteristics for an index access path (Jakobsson – col. 4, lines 1-67) in the updating index of database table environment.

With respect to claims 30-31, Huang discloses wherein the characteristics of the index used in determining which operation is more efficient comprise a size and complexity of the index as claimed (col. 3, lines 22-38); and wherein the index comprises a binary tree structure, and wherein a height of the index tree is indicative of the size and complexity of the index (col. 1, lines 10-38, col. 2, lines 5-15 and col. 3, lines 57-67).

With respect to claim 32, Huang discloses a method of updating index as discussed in claim 27. Also Huang discloses an estimated time to sort the index keys and an estimated time to rebuild the index from the sorted keys as claimed (abstract, col. 2, lines 5-15, col. 3, lines 40-54, col. 7, lines 17-67 and col. 8, lines 1-30).

Huang does not explicitly indicate, “determining which operation is more efficient.”

However, Jakobsson discloses heuristic ranking of index access methods (col. 8, lines 15-65).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Huang with the teachings of Jakobsson so as to obtain a method for updating an index in on a database table. This combination would provide the method with an index access path to retrieve data from a table and thus would reduce the amount of processing for the most of fetching

for the row with superior performance characteristics for an index access path (Jakobsson – col. 4, lines 1-67) in the updating index of database table environment.

With respect to claims 33, Huang discloses a method of updating index as discussed in claim 27. Also Huang discloses maintaining a list of threshold values for different index sizes (col. 6, lines 8-64).

Huang does not explicitly indicate, “wherein determining whether the first or second operation is more efficient is based on the comparison value.”

However, Jakobsson discloses heuristic ranking of index access methods (col. 8, lines 15-65).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Huang with the teachings of Jakobsson so as to obtain a method for updating an index in on a database table. This combination would provide the method with an index access path to retrieve data from a table and thus would reduce the amount of processing for the most of fetching for the row with superior performance characteristics for an index access path (Jakobsson – col. 4, lines 1-67) in the updating index of database table environment.

With respect to claim 34, Huang discloses the number of the received data records as a percentage of all data records in the table as claimed (col. 1, lines 40-48, col. 2, lines 5-15 and col. 15, lines 35-42).

With respect to claim 35, Huang discloses wherein the index comprises a binary tree and wherein the list of threshold values provides one threshold for each of a plurality of different height index binary trees, wherein the threshold selected for



Art Unit: 2172

comparison with the comparison value is based on the height of the index to update as claimed (col. 1, lines 10-38, col. 2, lines 5-15 and col. 3, lines 57-67; and col. 6, lines 8-64).

With respect to claim 36, Huang discloses a method of updating index as discussed in claim 27. Also Huang discloses the threshold value as claimed (col. 6, lines 8-64).

Huang does not explicitly indicate, "wherein the first operation is more efficient."

However, Jakobsson discloses heuristic ranking of index access methods (col. 8, lines 15-65).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Huang with the teachings of Jakobsson so as to obtain a method for updating an index in on a database table. This combination would provide the method with an index access path to retrieve data from a table and thus would reduce the amount of processing for the most of fetching for he row with superior performance characteristics for an index access path (Jakobsson – col. 4, lines 1-67) in the updating index of database table environment.

Claim 37 is essentially the same as claim 27, except that it is directed to a system rather than a method ('406 of col. 2, lines 5-42; col. 2, lines 35-53, col. 3, lines 40-67 and col. 15, lines 8-60; and '088 of col. 8, lines 15-65), and is rejected for the same reason as applied to the claim 27 hereinabove.

Claim 38 is essentially the same as claim 28, except that it is directed to a system rather than a method (col. 8, lines 15-65), and is rejected for the same reason as applied to the claim 28 hereinabove.

Claim 39 is essentially the same as claim 29, except that it is directed to a system rather than a method ('406 of col. 1, lines 40-48, col. 2, lines 5-15 and lines 35-42; and '088 of col. 8, lines 15-65), and is rejected for the same reason as applied to the claim 29 hereinabove.

Claims 40-41 are essentially the same as claims 30-31, except that they are directed to a system rather than a method (col. 3, lines 22-38; and col. 1, lines 10-38, col. 2, lines 5-15 and col. 3, lines 57-67), and are rejected for the same reason as applied to the claims 30-31 hereinabove.

Claim 42 is essentially the same as claim 32, except that it is directed to a system rather than a method ('406 of abstract, col. 2, lines 5-15, col. 3, lines 40-54, col. 7, lines 17-67 and col. 8, lines 1-30; and '088 of col. 8, lines 15-65), and is rejected for the same reason as applied to the claim 32 hereinabove.

Claim 43 is essentially the same as claim 33, except that it is directed to a system rather than a method ('406 of col. 6, lines 8-64; and '088 of col. 8, lines 15-65), and is rejected for the same reason as applied to the claim 33 hereinabove.

Claim 44 is essentially the same as claim 34, except that it is directed to a system rather than a method (col. 1, lines 40-48, col. 2, lines 5-15 and col. 15, lines 35-42), and is rejected for the same reason as applied to the claim 34 hereinabove.

Claim 45 is essentially the same as claim 35, except that it is directed to a system rather than a method (col. 1, lines 10-38, col. 2, lines 5-15 and col. 3, lines 57-67; and col. 6, lines 8-64), and is rejected for the same reason as applied to the claim 35 hereinabove.

Claim 46 is essentially the same as claim 36, except that it is directed to a system rather than a method ('406 of col. 6, lines 8-64; and '088 of col. 8, lines 15-65), and is rejected for the same reason as applied to the claim 36 hereinabove.

Claim 47 is essentially the same as claim 27, except that it is directed to a program is embedded in a computer readable medium rather than a method ('406 of col. 2, lines 5-42; col. 2, lines 35-53, col. 3, lines 40-67 and col. 15, lines 8-60; and '088 of col. 8, lines 15-65), and is rejected for the same reason as applied to the claim 27 hereinabove.

Claim 48 is essentially the same as claim 28, except that it is directed to a program is embedded in a computer readable medium rather than a method (col. 8, lines 15-65), and is rejected for the same reason as applied to the claim 28 hereinabove.

Claim 49 is essentially the same as claim 29, except that it is directed to a program is embedded in a computer readable medium rather than a method ('406 of col. 1, lines 40-48, col. 2, lines 5-15 and lines 35-42; and '088 of col. 8, lines 15-65), and is rejected for the same reason as applied to the claim 29 hereinabove.

Claims 50-51 are essentially the same as claims 30-31, except that they are directed to program is embedded in a computer readable medium rather than a method

(col. 3, lines 22-38; and col. 1, lines 10-38, col. 2, lines 5-15 and col. 3, lines 57-67), and is rejected for the same reason as applied to the claims 30-31 hereinabove.

Claim 52 is essentially the same as claim 32, except that it is directed to a program is embedded in a computer readable medium rather than a method ('406 of abstract, col. 2, lines 5-15, col. 3, lines 40-54, col. 7, lines 17-67 and col. 8, lines 1-30; and '088 of col. 8, lines 15-65), and is rejected for the same reason as applied to the claim 32 hereinabove.

Claim 53 is essentially the same as claim 33, except that it is directed to a program is embedded in a computer readable medium rather than a method ('406 of col. 6, lines 8-64; and '088 of col. 8, lines 15-65), and is rejected for the same reason as applied to the claim 33 hereinabove.

Claim 54 is essentially the same as claim 34, except that it is directed to a program is embedded in a computer readable medium rather than a method (col. 1, lines 40-48, col. 2, lines 5-15 and col. 15, lines 35-42), and is rejected for the same reason as applied to the claim 34 hereinabove.

Claim 55 is essentially the same as claim 35, except that it is directed to a program is embedded in a computer readable medium rather than a method (col. 1, lines 10-38, col. 2, lines 5-15 and col. 3, lines 57-67; and col. 6, lines 8-64), and is rejected for the same reason as applied to the claim 35 hereinabove.

Claim 56 is essentially the same as claim 36, except that it is directed to a program is embedded in a computer readable medium rather than a method ('406 of

Art Unit: 2172

col. 6, lines 8-64; and '088 of col. 8, lines 15-65), and is rejected for the same reason as applied to the claim 36 hereinabove.

**Contact Information**

9. Any inquiry concerning this communication should be directed to Anh Ly whose telephone number is (703) 306-4527 or via E-Mail: **ANH.LY@USPTO.GOV**. The examiner can be reached on Monday – Friday from 8:00 AM to 4:00 PM.

If attempts to reach the examiner are unsuccessful, see the examiner's supervisor, Kim Vu, can be reached on (703) 305-4393.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to: (703) 746-7238 (after Final Communication)


or: (703) 746-7239 (for formal communications intended for entry)

or: (703) 746-7240 (for informal or draft communications, or Customer Service Center, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Fourth Floor (receptionist).

Inquiries of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.

ALH  
Oct. 22nd, 2002.

  
HOSAINT T. ALAM  
PRIMARY EXAMINER